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source and a lens barrel holding said collimator lens, said lens barrel being integrated with said holder.

44. A unit according to claim 37, wherein said laser light source is a multi-beam semiconductor laser.

REMARKS

In view of the above amendments and the following remarks, Applicants request favorable reconsideration and allowance of the above-identified application.

Claims 27-44 are now pending in this application with Claims 27 and 37 being independent. By this Amendment, Applicants have canceled Claims 45-57 and amended Claims 27 and 37.

Claim 49 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Without conceding the propriety of the rejection, Applicants have canceled that claim, rendering the rejection moot.

Claims 27-30, 32, 34-39, 41, 43 and 44 stand rejected under 35 U.S.C. § 102 over Japanese Laid-Open Application No. 10-244707 (Asami '707). Claims 31 and 40 stand rejected under 35 U.S.C. § 103 over Asami '707 in view of U.S. Patent No. 5,408,493 (Aoki). Claims 33 and 42 stand rejected under 35 U.S.C. § 103 as being unpatentable over Asami '707 in view of U.S. Patent No. 5,999,345 (Nakajima, et al.). Claims 45-47, 50 and 52-56 stand rejected under 35 U.S.C. § 103 as being unpatentable

over Asami '707 in view of U.S. Patent No. 4,993,801 (Sarraf). Claim 48 stands rejected under 35 U.S.C. § 103 as being unpatentable over Asami '707 in view of Japanese Laid-Open Application No. 9-243944 (Asami '944). Claims 49 and 57 stand rejected under 35 U.S.C. § 103 as being unpatentable over Asami '707 in view of Sarraf and Aoki. Claim 51 stands rejected under 35 U.S.C. § 103 as being unpatentable over Asami '707 in view of Sarraf and Nakajima et al. Applicants traverse these rejections.

As recited in independent Claim 1, Applicants' invention is directed to a multi-beam scanning apparatus having a light source unit, scanning means and a housing. The light source unit has a laser light source and a driving circuit board for driving the laser light source. The laser light source includes a laser chip having a plurality of emission points for emitting laser beams and a terminal for energizing the laser chip. The driving circuit board is connect to the terminal of the laser light source and has a longitudinal edge. The housing holds the scanning means and supports the light source unit on a wall of the housing. The terminal of the laser light source is fixed to the driving circuit board such that a straight line passing the plurality of emission points of the laser light source is inclined with respect to the longitude edge of the driving circuit board.

Claims 37 is directed to a multi-beam light source unit which is configured similar to the light source unit of independent Claim 27.

With such a construction of the present invention, the distance between the laser beams can be adjusted by inclining or rotating the array of emission points, without having the edges of the driving circuit board protruding significantly over predetermined size limitations.

Asami '707 describes an inclined laser array in which each lead pin 1a of the semiconductor laser 1 is fixed to a small substrate 15. The pins are not fixed to driving substrate 14. Accordingly, small substrate 15 is rotated for adjustment. Thus, the system described in that document requires the provision of the small substrate 15 and does not describe the inclination of emission points with respect to a longitudinal edge of the driving circuit board without employing such a small substrate separate from the driving circuit board.

Accordingly, Applicant submits that Asami '707 fails to describe or to suggest at least the features of a terminal of a laser light source being fixed to a driving circuit board such that a straight line passing a plurality of emission points of the laser light source is inclined with respect to a longitudinal edge of the driving circuit board, as in recited in independent Claim 27 and 37.

Aoki is directed to a method for adjusting the optical axis of a semiconductor laser. Nakagima, et al. is directed to a multi-beam light source with the light source section being supported so that it can be angularly adjusted. Neither of these documents remedy the deficiencies noted above with respect to Asami '707.

Accordingly, Applicants submit that the independent claims are allowable over the documents of record, and request withdrawal of the rejections under 35 U.S.C. §§ 102 and 103.


The remaining claims in the present application are dependent claims which depend from the independent claims discussed above, and thus are patentable over the documents of record for reasons noted above with respect to those independent claims. In

addition, each recites features of the invention still further distinguishing it from the applied documents. Applicants request favorable and independent consideration thereof.

Applicants submit that this application is in condition for allowance, and request a Notice thereof.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE TO CLAIMS

27. (Amended) A multi-beam scanning apparatus comprising:

a light source unit comprising a laser light source and a driving circuit board for driving said laser light source, said laser light source including a laser chip having a plurality of emission points for emitting laser beams and a terminal for energizing the laser chip, said driving circuit board being connected to the terminal of said laser light source and having a longitudinal edge;

scanning means for scanning a surface to be scanned with the laser beams emitted by said light source unit; and

a housing having a wall [with a longitudinal edge],

wherein said housing contains said scanning means and supports said light source unit on the wall, and

wherein the terminal of said laser light source is fixed to said driving circuit board such that a straight line passing the plurality of emission points of said laser light source is inclined with respect to the longitudinal edge of said driving circuit board [passes the plurality of emission points].

37. (Amended) A multi-beam light source unit comprising:

a laser light source comprising a laser chip having a plurality of emission points for emitting laser beams and a terminal for energizing the laser chip; and

a driving circuit board for driving said laser light source, said driving circuit board [being connected to said terminal of said laser light source and] having a longitudinal edge,

wherein the terminal of said laser light source is fixed to said driving circuit board such that a straight line passing the plurality of emission points of said laser light source is inclined with respect to the longitudinal edge of said driving circuit board [passes the plurality of emission points].